

What is Claimed is:

1. A multi-agent caching system for optimizing a bidding process for resources, comprising:
  - 5 a Bid Manager agent for issuing a call for bids for usage of said resources, receiving said bids and selecting a best bid from among said bids, wherein each of said bids defines a predetermined context;
  - a plurality of Bidder agents for issuing said bids according to predetermined bidding policies in response to said call for bids, wherein one of said Bidder agents
  - 10 issues said best bid and provides said resources upon selection of said best bid by said Bid Manager; and
  - a plurality of ResourceAdapters for providing a uniform interface to access APIs of said resources, one of said ResourceAdapters being a CachingAdapter for maintaining cached bids for predetermined contexts from predetermined ones of said
  - 15 Bidders, receiving from said Bid Manager said call for bids and issuing said cached bids to said Bid Manager instead of requiring said predetermined Bidders to issue said bids, and a NoCachingAdapter for receiving from said Bid Manager said call for bids, re-issuing said call for bids to ones of said Bidders other than said predetermined Bidders, receiving said bids from said ones of said Bidders other than said
  - 20 predetermined Bidders and sending said bids to said Bid Manager.
2. The multi-agent caching system of claim 1, wherein said CachingAdapter updates said cached bids in response to new contexts of said bids.
- 25 3. The multi-agent caching system of claim 1, wherein said Bid Manager selects said best bid by sorting said ResourceAdapters according to decreasing values of said bids and selecting a first available one of said Bidder agents according to said ResourceAdapters as sorted.
- 30 4. The multi-agent caching system of claim 1, wherein each said context is defined by a discrete parameter value.
5. The multi-agent caching system of claim 1, wherein each said Bidder agent sends a notification message to said Bid Manager agent in the event of any changes to

its bidding policies, in response to which said Bid Manager agent updates said CachingAdapter.

6. The multi-agent caching system of claim 5, wherein said bidding policies are  
5 stored via said CachingAdapter as entries in a table and said Bid Manager agent updates individual ones of said cached bids to reflect said changes in said bidding policies.

7. The multi-agent caching system of claim 5, wherein said bidding policies are  
10 stored via said CachingAdapter as general rules and said Bid Manager agent clears all of said cached bids.

8. An optimized method of acquiring bids from a plurality of Bidders for  
resources, comprising the steps of:  
15 issuing a request for bids for usage of said resources, wherein each of said bids defines a predetermined context;  
accessing a cache of stored bids and related contexts to determine whether said cache contains bids defining said predetermined context;  
issuing a call for bids to said Bidders in connection with which no bids  
20 defining said predetermined context are stored in said cache, in response to which said Bidders return bids to said Bid Manager and said bids are stored in said cache along with said predetermined context; and  
retrieving from said cache said bids defining said predetermined context  
previously stored by said Bidders.

25 9. The optimized method of claim 8, further comprising the step of updating said stored bids in response to new contexts of said bids.

10. The optimized method of claim 8, further comprising the step of selecting a  
30 best bid by sorting said bids according to decreasing values of said bids and selecting a first available one of said Bidders according to said sorting.

11. The optimized method of claim 8, wherein each said context is defined by a discrete parameter value.

12. The optimized method of claim 8, further comprising the step of sending a notification message to said Bid Manager in the event of any changes to its bidding policies, in response to which said Bid Manager updates said cache.

13. The optimized method of claim 12, further comprising the step of storing said bidding policies as entries in a table.

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14. The optimized method of claim 13, further comprising the step of updating individual ones of said cached bids for updating said cache to reflect said changes in said bidding policies.

15. The optimized method of claim 12, further comprising the step of storing said bidding policies as general rules.

16. The optimized method of claim 15, further comprising the step of clearing all of said cached bids for updating said cache to reflect said changes in said bidding policies.

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